September 29, 1966

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Dear

Attached are a few thoughts related to items we discussed during my recent visit. Thanks to you and I feel that the visit was extremely fruitful and trust that it will be possible to periodically duplicate the experience.

By now you may have heard is due back this week. However, I have included some miscellaneous systems specs and costs for the ultrasonic signal device.

I'm afraid I mislead regarding a competing dog training kit. It turned out to be only a book containing instructions for making a home-made skinner box out of cardboard and mailing tubes.

Thank you again for the demonstrations, tours, and discussions which provided.

Sincerely,

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1. Ultrasonic Signal System

Several commercially available sphericon "tweeters" advertise a response up to 30-40 Kc. The literature which we have seen suggests that these claims need to be supplemented by efficiency and power ratings at frequencies above 15 Kc. An inexpensive speaker which you might try is:

Lafayette 21R6715 Sphericon Tweeter @ $14.40

(Lafayette Radio Electronics, 111 Jericho Turnpike, Syosset, L.I., New York).

We could test these speakers and provide you with approximate power levels radiated at various frequencies and input power, select an appropriate amplifier and ocsillators, and ship the system to you within a period of about 2 weeks. Cost for two variable frequency generators, 30 watt amplifier, speaker, and testing would amount to $325.00.

2. Field Detector for Ultrasound

The sphericon speakers can be used as rather crude and cheap microphones and could provide a simple technique for determining if moderate to large amounts of ultrasonic energy are being radiated in the field. You could filter the output of one of the above speakers, amplify, and display the signal voltage on a meter. The microphone would have to be positioned close to the speaker.

If we were to supply the signal system we could also provide a self-contained detector system for an additional $115.00.

Because of the many transmission problems associated with ultrasonic energy in the presence of wind or thermal gradients it

would be advantageous to consider an r.f. command system and signal generation at the platform. To evaluate the training problems associated with the generation of signals at the beast you could assemble a low cost model plane R.C. system which gates ultrasonic signal oscillators to an electrostatic transducer. It is possible that the transducer could be eliminated if sufficient ultrasonic energy is radiated directly from the oscillator components, in which case the R.C. would have to switch the oscillators on and off. Weight should be less than 4 oz. using off-the-shelf inexpensive gear. could assemble such a system and evaluate the circuit component radiation if desired.

3.

can be ordered from:

It might be simpler and less expensive to effect recall by merely

4. Release

R.F. command receiver/actuator packages can be constructed which weigh less than To prevent undesired release

by chance interference a logic circuit would be desirable, but this could consist of [redacted] For training purposes a low cost model R.C. unit can be used. A test unit can be purchased directly from a model supply house (such as those described in the advertisement left with you.) If the available model units prove too heavy or unsuitable for your application [redacted] could assemble a low cost receiver/actuator pkg. [redacted] and is tailored to your training situation.